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REPORT

OF  
COMMITTEE ON CONSTRUCTION  
AND  
Management of Privies

MADE TO THE  
EXECUTIVE COMMITTEE  
OF THE  
N. O. Auxiliary Sanitary Association,

APRIL 17TH, 1880.

W. H. Dunn

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future and in accordance with the suggestions presented herewith.

#### PRIVIES WITH VAULTS.

LOCATION.—Obviously the best location is as far from human habitation as possible, and, in view of the probability of the erection of new buildings in the future, as far from any property line as practicable.

Under no circumstance in the judgment of this committee should the erection of a receptacle for excreta be tolerated within six feet of any dwelling, school or other buildings in which human beings live or congregate.—The present pernicious custom of placing a vault within the wall of a dwelling should be strictly forbidden. From vault to roof a privy should be separate from any other building; thus permitting a free circulation of air around it and preventing the communication through walls and passages, to the rooms of the building, of noxious gases. In the case of two story privies communication may be had with the upper story by means of corridors, roofed, and protected from the weather and observation by means of blinds and lattice work, never by tight walls. The seats in the second story should be so placed as to render impossible the soiling of the lining boards.

Otherwise it will be impossible thoroughly to cleanse it.

FLUES.—The necessity of flues in privies will not be questioned by any one who has opened the seat, for some time closed, in one unprovided with any other out-

let. The rush of gases is a convincing argument in favor of a flue.

The passage in the opinion of your committee should be never less than 36 square inches in area and, with the size of the vault, it should increase—Its lower end should open into the vault at the highest point at which the gases will have free access to it. Its height should be proportioned to its proximity to buildings. If not more than six feet of interval exists between it and the nearest building occupied by man, it should certainly rise several feet above any opening in such building—With the increase of interval there might be allowed a less height of flue. The securing of a constant upward current in the flue is difficult, if not impossible, without the use of artificial heat. Connection through a brick or metal passage with a chimney, or the use of a small jet of gas, will accomplish the object, but such remedy is too costly to apply in most tenements. The application of the gas jet is very effective and simple. It is placed in the flue at such height as may be convenient, and, through a pane of glass set in the side of the flue, may be made to illuminate the closet. It need not burn more than  $\frac{1}{2}$  foot of gas per hour or 360 feet per month. Where this expenditure can be afforded, it certainly offers a most excellent remedy for the evil of ill smelling vaults.

A flue of sufficient size will at all times prevent any accumulation of pressure of gas in a vault and dispose of it as fast as generated, though it will not keep it filled with pure air. Duplicate flues are recommended



as being more likely to give a draft, for the reason that the slightest difference in the action of the sun or wind on the two columns of enclosed air, would cause one to ascend while the other descended. In large institutions, where partitions divide the privy into two or more parts, it would be advisable to make the partitions double and utilize the intervening space as a flue. There can be no doubt that, the larger the flue, the better. As to material, the flue may be of wood, tile or metal. Probably metal would be preferable, as under the action of the sun it would become heated and create a draft. Whatever the material of the remainder, it is advisable that the cap be of metal. A form of cap used on lighthouse lanterns, and often on chimneys having the object of preventing a *down* draft, is recommended.

VAULTS.—In the estimation of your committee, the three prime requisites to the good sanitary condition of a vault, are imperviousness, superficiality, ease of access. In insisting on the imperviousness of the material from which a vault is built, the idea is, not only to prevent leakage into the surrounding soil, but also to do away with the nuisance arising from exposure to the air, of a surface soaked with foul liquids, every time it is emptied. In their search for a material from which such a vault could be constructed cheaply, they caused to be made a number of experiments, having the object of proving whether or not bricks could be rendered water-tight by boiling in coal tar or any of its products. Through the kindness of Mr. Fletcher, they were

enabled to investigate this subject at the tar factory under favorable circumstances. While they did not succeed in finding a means of rendering bricks water tight, your committee think they have conclusively proved that boiling in tar, pitch or dead oil, adds little or nothing to their value for our purpose. Except in the case of oil, it was impossible to penetrate the brick, and the oil soaked tile immersed in water, absorbed it as readily nearly as would the same tile before treatment, the oil leaving it as the water entered.

Brickwork rendered inside and out with pitch, or set in the same, creasoted lumber, cast iron, glazed earthenware, are the materials most likely to give satisfaction. When creasoted lumber is used, (undressed) it will be necessary to coat it with roofing pitch. This will form a glaze easily cleansed, and the importance of constructing a vault so that it can not only be easily emptied, but as easily cleansed when emptied, can not be too strongly insisted upon. If excrement is left sticking to the sides, the surface from which gases can emanate, so far from being diminished, is actually increased, the proportionate increase depending on the depth of the vault as compared with its floor area. From creasoted lumber, probably the cheapest form of vault could be made. It would contain in its fibres a material in the presence of which, no disease germ can exist. Its permanency has been amply demonstrated, and from its various good qualities, your committee recommend it strongly.

Pipes of glazed earthenware or cast iron set verti-

cally, one under each seat, would be very easy to empty completely, and could be washed with the least expenditure of water. They would have the important advantage of being jointless and therefore tight beyond a question. The glaze on the earthenware should be that technically known as slip, i. e., porcelain. Either this or cast iron, once set would be practically everlasting. They could without prejudice to their efficiency be set any depth in the ground, provided, only that their upper ends projected above the surface.

As to the form of the vault, it would not seem to be of importance whether it be round, square or oblong. Its size, however, is a matter of great importance. The conclusion arrived at on this part of the subject, is that no vault should be constructed to hold more than six months accumulation, while your committee urge the importance of regular inspections by the city or Board of Health, to see that every used vault is emptied, washed and disinfected every three months. Conservancy means nuisance, unless accompanied by perfect disinfection, and here it is the committee's desire to record their decided opinion that disinfection should not be allowed to cease with the cleansing of the vault, but continued, year in and out, until the happy time when some effective substitute shall have been provided for our present system.

The size should be regulated by the number of rooms in the dwelling, or of persons in the school or factory, as the case may be. It is of importance that the vault be above the water line in the soil, except in the case



of glazed earthenware or cast iron, as heretofore mentioned, and when small enough to permit it, entirely above ground. When so located, there can be no possibility of a leak from without, and any leak in the opposite direction will be readily detected.

It would facilitate the emptying and cleansing of a vault, if its floor were inclined and provided with a pocket. Into this pocket the suction pipe of the excavating apparatus could be dropped and the vault thus more completely emptied. When built of bricks or tiles, the foundation must be laid on a double layer of planks. All vaults should be protected from the action of the sun.

It hardly seems necessary to speak of the importance of stopping the pernicious practice of connecting vaults with street gutters.

**BUILDINGS.**—The building over the vault should be provided with ventilation by means of a blind or lattice work. Every seat must have a hinged cover. There should be a window or some opening to admit light.

**SCHOOL PRIVIES.**—Should be located not less than (15) fifteen feet from the school, to which they should be connected by a covered way. The material and size of vault to be in accordance with suggestions in other parts of this report. The building, which may be double, having seats back to back, must have one hole to not more than (25) twenty-five pupils; each hole in a separate apartment not less than (20) twenty inches wide. Partitions to rise ( $7\frac{1}{2}$ ) seven and one

half feet. Back partition running through the building to rise to the roof and to be double, the intervening space opening into the vault at the level of the seats and into the flues at the roof. The building should be not less than (10) ten feet high to the eaves. A door with fixed blinds, or with transom above to furnish light, must be provided in each apartment, though the building may be ventilated as a whole. Probably fixed blinds would serve better than a transom, as they would assist ventilation while not furnishing enough light to make the place attractive as a reading room. Where possible, the urinals should be separate from the privy and connected with the water works. No urinal should be tolerated without a full supply of water. The flues, and there should be not less than two, must rise above the eaves of the school building. The floor of a school vault should drain to one end, where, by means of a pocket and well, covered ordinarily by a flag or iron plate, it can be emptied with less nuisance and inconvenience, than through the floor or a seat.

In conclusion, your committee would urge the necessity of a strict supervision, by the proper authorities, over the privy system. In their opinion, no new premises should be occupied without a permit to be issued upon the affidavit of an inspector, that the ordinance, herein recommended, has been complied with.

Respectfully Submitted,

GUSTAVUS DEVRON, M. D.,

E. HEATH, *Chairman.*

WALTON CLARK,

*Committee.*





